for five years; it is recommended that it should receive not less than £5,000 for the first year and £20,000 for each of the four following years.

3. That the board shall be representative of the various sections of science and industry.

4. That the board shall, as one of its chief functions, consider all proposals for specific scientific researches, and shall allot to the proper person or persons the duty of conducting such specific researches as it may approve.

5. That in order to avoid centralization, and in the interest of economy, the board, in the carrying out of investigations, shall wherever possible cooperate with the university, college authorities in the various centers, with a view to making the fullest possible use of their staffs and laboratories; there shall also be set up local advisory boards to inquire into, advise and report upon local problems.

6. That one of the duties of the board shall be to advise primary producers, and those engaged in industrial pursuits, as to the results of scientific investigations affecting or calculated to benefit their industries, including processes for the utilization of waste products.

7. That the board shall have power to establish scholarships and also to award bonuses and prizes, with the object of encouraging scientific and industrial research.

8. That the board shall keep touch with government departments and also with scientific and educational institutions, with a view to cooperation in scientific investigation as well as in furtherance of scientific education and of everything which will tend to foster a greater appreciation of the advantages of science, not only by producers, but by the people at large.

RESEARCH IN THE CERAMIC INDUSTRY

The National Research Council and the American Ceramic Society have established a joint committee for promoting the investigation of scientific problems underlying the ceramic industry, especially by founding a series of research fellowships whose holders shall devote their attention exclusively to these problems. A press statement from the council says:

The ceramic industries, including brick and tile making, and general crockery and glass manufacture as well as ornamental potteries, although among the earliest ones developed by man, have been the last of our great manufacturing industries to reach the status of an applied science. They have been based for centuries on rule-of-thumb methods, trade secrets and individual artistry. As far as their artistic features go science can do little or nothing for them, but in all other ways it can be of great advantage to them.

In sharp contrast to the painfully slow development of these ancient industries is the extraordinarily swift development of such exclusively modern industries as those of synthetic dyes and others entirely based on the discoveries of modern science. The startling success and speed of growth of these are almost entirely the fruit of highly organized scientific research, with methods of scientific control at young stages of the operations. A famous English scientist is authority for the statement that the capital, large as it has been, which the German dye firms have invested in scientific research has been the best-paying investment which the world has ever seen. It is certain that an organized effort to develop the fundamental science of ceramics can have a great influence in advancing the industry.

AWARDS BY THE HENRY DRAPER COMMITTEE OF THE NATIONAL ACADEMY OF SCIENCES

In accordance with the recommendations of the Henry Draper Committee, the following grants and award of medals have been made by the National Academy:

1. $400 to Dr. S. A. Mitchell, director of the Leander McCormick Observatory, University of Virginia, to complete the purchase of a measuring microscope for use in the photographic determination of stellar parallaxes, on the basis of observations made with the 27-inch refracting telescope. The academy awarded the sum of $250 from the Draper Fund to Dr. Mitchell in 1916 to apply on the purchase of this instrument. The microscope cost $650. The proposed grant of $400 will complete the purchase, in effect making the instrument the property of the academy, and Professor Mitchell will devote an equivalent sum, $400, to the other needs of his parallax research.

2. $300 to Dr. Joel Stebbins, professor of astronomy in the University of Illinois, to assist in the further development and application of the photo-electric cell photometer.

3. $400 to Dr. Frank Schlesinger, director of the Allegheny Observatory, to enable him to test an automatic zenith camera for the determination of terrestrial latitudes with the expectation that the results will be more accurate than any hitherto

obtained by other means. It is proposed that this instrument be mounted at least temporarily at the International Latitude Observatory, Ukiah, California, where the astronomer in charge, Mr. Neubauer, will operate it for a year or two as a labor of love. The grant is needed to install the instrument at Ukiah and to make certain auxiliary apparatus required in its operation.

The Henry Draper Gold Medal has been awarded to Alfred Fowler, F.R.S., professor of astrophysics, Imperial College, South Kensington, London, at the time of the stated meeting in April, 1920, for his researches in celestial and laboratory spectroscopy, which have led to a valuable increase of our knowledge of sunspots, comets and the stars—especially red stars of Secchi's Type III.

ADDRESSES AT THE ST. LOUIS MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

As has been noted here the American Association will hold its seventy-second meeting in St. Louis from December 29 to January 3, under the auspices of the educational institutions of that city. With the period of reconstruction now at hand, and with a larger measure than ever before of general appreciation of the extreme importance and value to the country of scientific research, it is expected that this meeting will be one of unusual interest. The address of the retiring President of the Association, Dr. John Merle Coulter, of the University of Chicago, will be on "The Evolution of Botanical Research" and will be delivered at the opening General Session on Monday night, December 29. The addresses of the retiring vice-presidents of the sections, to be delivered throughout the week, are as follows:

Section A.—George D. Birkhoff. "Recent advances in dynamics."

Section B.—Gordon F. Hull. "Some aspects of physics in war and peace."

Section C.—Alexander Smith. "Chemistry as it is taught."

Section D.—Ira N. Hollis. "Industrial problems of the United States."

Section E.—David White. "Geology as taught in the United States."

Section F.—William Patten. "The message of the biologist."

Section G.—Albert F. Blakeslee. "Sexuality in the mucors."

Section H.—Aleš Hrdlička. "The relations of psychology and anthropology."

Section I.—John Barrett. "New after-the-war phases of practical Pan-Americanism."

Section K.—F. S. Lee. "The untilled fields of public health."

Section L.—Stuart A. Courtis. "The part played by heredity and maturity as factors conditioning the effects of training."

Section M.—Henry P. Armsby. "The organization of research."

On Tuesday night, December 30, Dr. Simon Flexner, president of the association, will deliver a popular lecture, complimentary to the members of the association and affiliated societies and to the general public.

MR. FRICK'S BEQUESTS

WITH the exception of approximately $25,000,000 bequeathed to his family, relatives, friends and employees, the will of Henry C. Frick leaves his estate, believed to be worth approximately $145,000,000, for public, charitable and educational purposes.

Mr. Frick's house and art collection in New York city, which after the termination of Mrs. Frick's life estate are to go to the public, are valued at approximately $50,000,000. An endowment of $15,000,000 is provided to maintain this as "The Frick Collection."

Pittsburgh, where much of Mr. Frick's wealth was acquired, receives a tract of about 151 acres of land in the 14th ward of that city for a park and $2,000,000 in trust to maintain and improve the property.

The residuary estate to be divided into 100 shares valued at about $500,000 each, is left to nineteen institutions.

Princeton University recieves thirty of these shares, or about $15,000,000.

Harvard receives ten shares, or about $5,000,000.

The Massachusetts Institute of Technology receives ten shares, or about $5,000,000.

Educational Fund Commission Pittsburgh, ten shares or about $5,000,000.

Mercy Hospital, Pittsburgh, ten shares, or about $5,000,000.

Thirteen shares are given to Mr Frick's